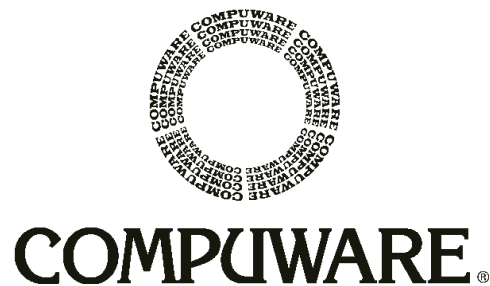


CICS Abend-AID/FX

Benefits Summary

Release 4.4



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Contents

Chapter 1. Product Summary	1-1
The IS Manager's Challenge	1-1
The Technical Support Manager's Challenge.	1-1
The Application Manager's Challenge	1-1
Meeting the Challenge with CICS Abend-AID/FX	1-2
Chapter 2. Benefits	2-1
An Automated Approach to Fault Resolution	2-1
Immediate Resolution of Application and System Faults.	2-1
Improved Stability of Your CICS System.	2-1
Ease of Migration between CICS Releases.	2-1
Improved Efficiency of System Programmers	2-2
Self-Sufficiency for Application Programmers	2-2
Chapter 3. Facilities	3-1
A Single Solution for Fault Diagnosis.	3-1
Application Programmer Facilities	3-1
Diagnostic Summary	3-1
COBOL Source Support	3-2
PL/I Source Support	3-4
Last 3270 Facility.	3-6
Comprehensive Environment Support.	3-7
System Programmer Facilities.	3-8
Diagnostic Summary	3-8
Task/Wait Analysis.	3-9
Domain Analysis	3-10
Program Change Summary	3-11
Intelligent Commands	3-12
Chapter 4. The Compuware Advantage	4-1
An Integrated Solution	4-1
The Compuware Commitment	4-1

Chapter 1.

Product Summary

CICS Abend-AID/FX thoroughly analyzes the causes of CICS application and region faults, enabling programmers to quickly resolve critical problems, regardless of the system's complexity. Whether it's a transaction abend, storage violation, application deadlock, or region outage, CICS Abend-AID/FX ensures that your staff has immediate, online access to vital information needed to quickly respond and get the system back on track for customers and users.

The IS Manager's Challenge

When a critical CICS production failure occurs, your programming staff can spend hours using manual methods to identify and resolve the problem. Meanwhile, your customers and users are denied access to critical information, directly impacting the service level agreements that keep you competitive.

Your staff can respond immediately to critical application and system faults, thereby improving system reliability and customer satisfaction.

CICS Abend-AID/FX addresses the unique needs of system and application programmers. System programmers can obtain an analysis of the problem and necessary data faster, enhancing their problem resolution skills. Application programmers can access complete online abend diagnostics from a single source, allowing self-sufficient problem resolution.

The Technical Support Manager's Challenge

When region problems occur, it becomes increasingly difficult for your system programmers to respond quickly because of the growing complexity of CICS. In addition, they are faced with maintaining multiple releases of CICS and possibly hundreds of regions — all at the same time.

Your staff can immediately be proficient in resolving CICS region faults, regardless of the CICS release level.

CICS Abend-AID/FX provides your system programmers with quick access to a detailed analysis of the dump and the ability to easily navigate the dump. The CICS Abend-AID/FX analysis includes a complete overview of the CICS structure, which helps identify changes between releases. This reduces the learning curve associated with resolving problems from one CICS release to the next.

The Application Manager's Challenge

When application failures occur, minimal staff may be available to resolve these problems because of the deployment of your more experienced resources to other critical projects. With inherited applications or vendor packages, it is also likely that the programmers maintaining these mission-critical applications are not familiar with the code.

Your staff can quickly resolve faults in your mission-critical applications, regardless of their level of expertise.

Meeting the Challenge with CICS Abend-AID/FX

CICS Abend-AID/FX provides a single source of information, detailing what, when, where, and why an abend occurred. This in-depth analysis of the problem, presented in a familiar format, enables even your most novice programmers to efficiently resolve critical application failures.

With CICS Abend-AID/FX, your staff gets what it needs to expertly manage and resolve CICS problems in test *and* production:

- Comprehensive fault analysis that suits the individual needs of application and system programmers — in a way that is easy to access and understand
- In-depth diagnostics that go beyond vague messages and codes manual descriptions
- Extended language support for COBOL and PL/I programs that integrates actual source code into the abend analysis, providing information in a concise, familiar format
- Specialized diagnostic support across a broad range of programming languages, databases, and software packages, including VS COBOL, VS COBOL II, COBOL/370, LE/370, PL/I, Assembler, DB2, IMS DL/I, Hogan, and MSA DCI
- Powerful navigation facilities that allow single-keystroke access to all analysis screens, storage areas, control blocks, and supporting dump information
- Single-product support for CICS Transaction Server for z/OS Version 2.2; CICS Transaction Server for OS/390 Versions 1.3, 1.2, and 1.1; CICS/ESA Version 4.1; and CICS/MVS Version 2.1.2
- Complete integration with other Compuware products, such as Abend-AID for WebSphere MQ, Abend-AID Fault Manager, and XPEDITER/CICS.

With CICS Abend-AID/FX, your system programmers will have a tool that enables quick and accurate resolution of region faults, regardless of the CICS release level. Your application programmers will have a full analysis of application faults in a familiar source code format for greater self-sufficiency in resolving critical problems.

Chapter 2.

Benefits

CICS systems are often the cornerstone in the competition for domestic and world market share. You may need to run CICS around-the-clock to maintain your competitive business position. Timely response to CICS application and region faults is imperative; however, the causes of these problems are many and complex. Usually, only one or two people in a shop can do it all, and the demands on their time are increasing every year. As a result, all programmers in a shop must be able to resolve CICS faults as quickly as possible, regardless of the complexity of the system.

An Automated Approach to Fault Resolution

The CICS Abend-AID/FX automated approach to fault resolution eliminates the need to rely on time-consuming, repetitive methods to resolve errors in mission-critical applications. With CICS Abend-AID/FX, you can feel confident that your staff has the best tool available to quickly respond to application and region problems, ensuring the reliability of your CICS systems and allowing you to meet customer service level agreements.

Immediate Resolution of Application and System Faults

CICS Abend-AID/FX reduces the complexity and sheer number of error resolution steps, providing the immediacy that programmers require today to quickly respond to CICS application and region faults.

With CICS Abend-AID/FX, application programmers get a complete diagnosis of the problem, answering the questions: what, when, where, and why did the problem occur? System programmers get to the information they need faster, including a full problem analysis that details “suspects” leading to the region failure.

Improved Stability of Your CICS System

CICS Abend-AID/FX helps you minimize critical application and region down time. It not only reduces the time required for problem analysis and resolution, but also helps system programmers identify and correct potential problems before they occur. CICS Abend-AID/FX acts as a “safety net” to ensure immediate resolution of critical problems, improving the reliability and stability of your CICS systems.

Ease of Migration between CICS Releases

CICS Abend-AID/FX reduces the learning curve inherent with new CICS versions, which typically bring new abend codes, internal architecture changes, and added functionality.

The CICS Abend-AID/FX analysis includes a detailed overview of the CICS structure, showing control blocks and relationships between components, allowing system programmers to determine what is new or different between supported releases. As a result, your programmers can identify those differences that may cause migration problems.

Improved Efficiency of System Programmers

CICS Abend-AID/FX responds to the needs of your system programmers at every level. Novice programmers receive analytical information and access to additional information in a logical, easy-to-access menu structure. Senior CICS specialists can obtain more detailed technical information, including access to the dump and control blocks in DSECT format, and the capability to easily identify storage ownership at the time of the failure. With CICS Abend-AID/FX, system programmers are equipped with the technical information and navigation capabilities they need to quickly and accurately resolve system faults.

Self-Sufficiency for Application Programmers

Because CICS Abend-AID/FX is able to zero in on the cause of the problem, application programmers seldom require DBA or system programmer assistance in diagnosing and resolving application faults. The analysis for application faults is formatted with the programmer in mind. The most critical information is presented up front in a concise, easy-to-understand format, saving valuable time usually wasted on collecting and analyzing data.

Chapter 3.

Facilities

CICS Abend-AID/FX provides a comprehensive, single solution that meets the unique problem-solving requirements of both application and system programmers. When a transaction fails, CICS Abend-AID/FX gives your application programmers immediate access to an in-depth analysis — pinpointing what, when, where, and why the failure occurred. When a region fails, CICS Abend-AID/FX gives your system programmers quick access to an analysis of the dump, along with advanced navigation capabilities that extend their analytical expertise.

A Single Solution for Fault Diagnosis

CICS Abend-AID/FX gives you an up-to-the-minute overview of all CICS fault activity for each region or region group in test or production. With this information, your staff can see at a glance which critical regions are experiencing problems and, as a result, be able to respond quickly. With a single keystroke, a directory of the selected entry is displayed, allowing immediate access to a complete diagnosis of the problem.

Figure 3-1. Fault Summary

CICS Abend-AID/FX ----- CICS Abend-AID/FX Summary ----- Row 000001 of 000057
COMMAND ==> SCROLL ==> PAGE

Region Descriptions	Tran Total	----- Region Entries -----							
		Total	Abend	Cancel	Snap	SVD	Other-CICS	Non-CICS	
TOTAL ENTRIES	142	22	11	0	1	5	3	2	
SALES PRODUCTION CICS	10	0	0	0	0	0	0	0	
INVENTORY PRODUCTION	4	3	1	0	0	2	0	0	
LEDGER PRODUCTION CICS	7	1	0	0	0	0	0	1	
QUALITY ASSURANCE	20	8	8	0	0	0	0	0	
DEVELOPMENT CICS	55	1	1	0	0	0	0	0	
CICSTST1	0	2	0	0	0	2	0	0	
CICSTST2	0	1	0	0	0	0	1	0	
CI21TEST	4	1	0	0	0	0	0	1	
CI33LIRS	0	1	0	0	1	0	0	0	
CI41JMBC	7	1	0	0	0	1	0	0	
HO1AC011	15	0	0	0	0	0	0	0	
HO1AC036	0	1	1	0	0	0	0	0	

Application Programmer Facilities

CICS Abend-AID/FX helps application programmers rapidly resolve CICS transaction abends. When an abend occurs, CICS Abend-AID/FX examines the problem and provides a clear, concise, online analysis that describes the error in detail. The analysis explains why the abend occurred and, in many cases, recommends solutions.

Diagnostic Summary

The Diagnostic Summary is the most important part of the CICS Abend-AID/FX analysis, providing the logical starting point for the debugging of transaction failures. The Diagnostic Summary presents a detailed analysis of the problem, including:

- Type of abend causing the problem
- Diagnosis of the abend
- Statement or offset in error
- Information on problem fields, including current values
- Highlighted fields in error
- Next sequential instruction
- Last CALL or EXEC CICS command
- Program linkage information.

Figure 3-2. AEIL Abend — Diagnostic Summary

```
CICS Abend-AID/FX ----- Diagnostic Summary ----- Row 000001 of 000062
COMMAND ==>                                     SCROLL ==> CSR
```

An AEIL abend occurred in program CCAASRA. The abending transaction was CCAD running at terminal B322 for user ID CICSUSER.

Analysis of the abend:

The AEIL abend occurred when a STARTBR request to File CCATEST could not be satisfied because the Data Set ID specified was in error. Make sure you specify the correct name in the EXEC CICS STARTBR DATASET(CCATEST) command.

The following is the search argument used for File(CCATEST):

Level/Field Name	Picture/Type	Value
01 TIME-RECORD		
02 EMPLOYEE-NUM	9(08)	00000000

Next Sequential Instruction

The next statement is:

```
000205          1000-START-BROWSE-EXIT. EXIT.
```

This statement is contained in paragraph "1000-START-BROWSE" of program CCAASRA.

CICS Abend-AID/FX provides additional information about the abend, including:

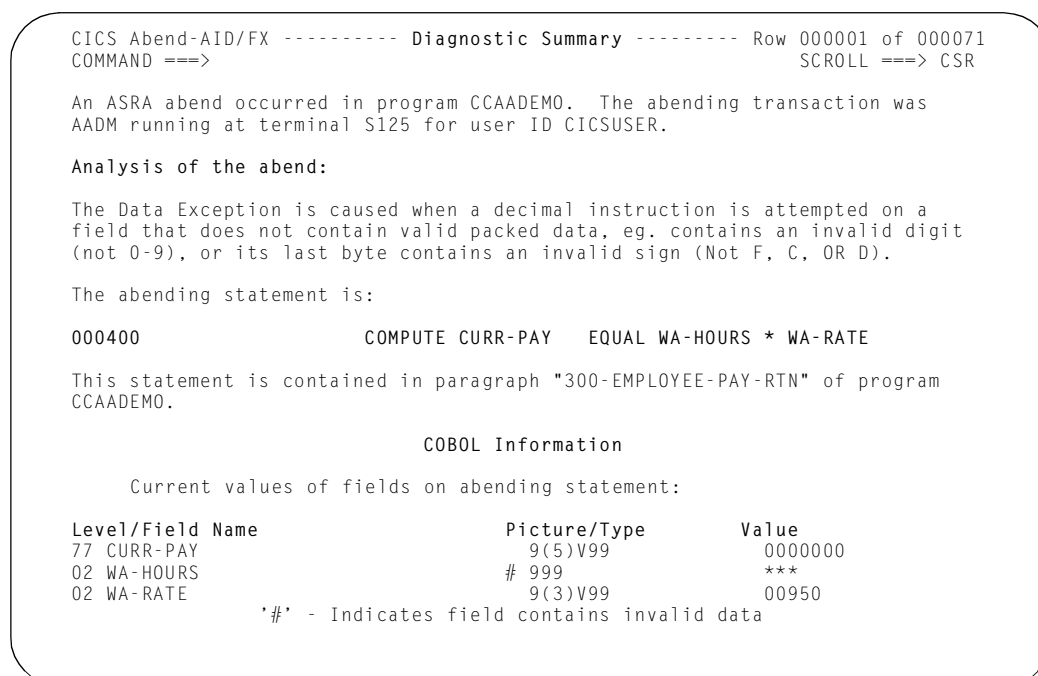
- Task, terminal, and program detail
- File statistics and record contents
- Storage areas and control blocks
- Trace table entries
- Last 3270 screen image and data stream analysis
- Specific database environmental data.

Powerful navigation facilities allow single-keystroke navigation to any of these areas of interest.

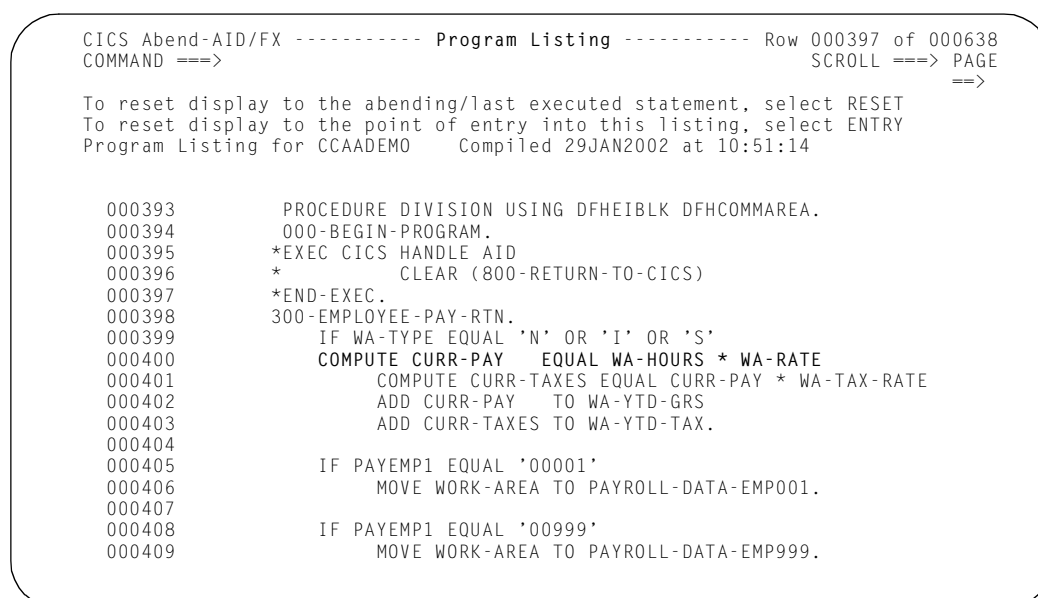
COBOL Source Support

With COBOL source support, CICS Abend-AID/FX merges actual source code into its analysis, displaying the actual statement in error and all related data fields in a format familiar to most programmers. COBOL source support also provides:

- The location and text of the abending statement, along with field names, definitions, and current contents
- The location and text of the last CICS call, as well as paragraph names

Figure 3-3. COBOL ASRA Abend with Source — Diagnostic Summary

- The source listing statements of the selected program, identifying the abending statement and displaying the names and contents of all individual fields in the Working-Storage and Linkage Sections.

Figure 3-4. COBOL Program Listing

PL/I Source Support

CICS Abend-AID/FX PL/I source support is an extra-cost option. With PL/I source support, the CICS Abend-AID/FX Diagnostic Summary screen provides the following items for the Analysis of the Abend paragraph:

- Line number and text for the PL/I source statement.
- Names and values of fields on the abending statement.

Figure 3-5. PL/I Analysis of the Abend with Source - Diagnostic Summary

```

CICS Abend-AID/FX ----- Diagnostic Summary ----- Row 000001 of3000076
COMMAND ==>                                           SCROLL ==> PAGE

An ASRA abend occurred in program CCAAEMP1. The abending transaction was
AADP running at terminal N037 for user ID CICSUSER.

Analysis of the abend:

The Data Exception is caused when a decimal instruction is attempted on a
field that does not contain valid packed data, eg. contains an invalid digit
(not 0-9), or its last byte contains an invalid sign (Not F, C, OR D).

The abending statement is:

000103                CURR_PAY    =  WA_HOURS * WA_RATE ;

This statement is contained in procedure CCAADEMP of program CCAAEMP1.

Qualified Field Name          Value
CCAADEMP:CURR_PAY
      AUTO      FIXED DEC(7,2)
CCAADEMP:WORK_AREA.WA_HOURS

```

- Access to the program listing by pressing Enter at a statement, with the listing positioned at the selected or abending statement number.

Figure 3-6. PL/I Source Listing — Abending Statement

```

CICS Abend-AID/FX ----- Program Listing ----- Row 000414 of 000646
COMMAND ==>                                SCROLL ==> PAGE
                                           ==>

To reset display to the abending/last executed statement, select RESET
To reset display to the point of entry into this listing, select ENTRY
Program listing for CCAAEMP1    Compiled 07JAN2002 at 11:33:49

000103          CURR_PAY  =  WA_HOURS * WA_RATE ;
000104          CURR_TAXES =  CURR_PAY * WA_TAX_RAT ;
000105          WA_YTD_GRS =  CURR_PAY + WA_YTD_GRS ;
000106          WA_YTD_TAX =  CURR_TAXES +  WA_YTD_TAX ;
000107          END ;
000108          OTHERWISE;
000109          END;

000110  L400_TRANSACTION_COMPLETE:

          EMPNUMB = PAYEMP1 ;
000111          EMPNAME = WA_NAME ;
000112          HRSWRKD = WA_HOURS ;
000113          HRLYRAT = WA_RATE ;
000114          GROSPAY = CURR_PAY ;
000115          GOTO SEND_PAYMAP2 ;

```

- Access to the program storage display by pressing Enter at a field on the abending statement, with the display positioned at the beginning of storage.

Figure 3-7. PL/I Program Storage with Source Support

```

CICS Abend-AID/FX ----- PL/I Storage Display ----- Row 000001 of 000679
COMMAND ==>                                SCROLL ==> PAGE
                                           ==>

Program Storage for CCAAEMP1    Compiled 07JAN2002 at 11:33:49
External Procedure Name..... CCAADEMP
Internal Procedure Name..... CCAADEMP          Generation...    0
Internal Procedure Offset... 0000000C

Field name, type and description      Field value

1  DFHCNSTS
   STATIC
2  DFHLDVER
   CHAR(22)                          LD TABLE DFHEITAB 320.
2  DFHEIBO
   FIXED BIN(15)                     >> LOW-VALUES <<
2  DFHEIDO
   FIXED DEC(7)
2  DFHEICB
   CHAR(8)                           >> SPACES <<

DFHEPI
   ENTRY
DFHEIPTR

```

For the Next Sequential Instruction, Last Call or EXEC CICS Request, and the Last Call or EXEC CICS request from HLL save area paragraphs, the following items are provided:

- Line number and text for the PL/I source statement.

- Access to the program listing by pressing Enter at a statement, with the display positioned at the selected statement.

Figure 3-8. PL/I Next Sequential Instruction with Source — Diagnostic Summary

```
CICS Abend-AID/FX ----- Diagnostic Summary ----- Row 000042 of 000076
COMMAND ==>                                     SCROLL ==> PAGE

Next Sequential Instruction

The next statement is:

000104                CURR_TAXES =  CURR_PAY * WA_TAX_RAT ;

This statement is contained in procedure CCAADEMP of program CCAAEEMP1.

The program was compiled on 07JAN2002 and is 00123C bytes long. It is part
of load module CCAADEMP which was loaded from PFHAMJ0.PROGRAM.SLS.LOADLIB.
It was link edited on 07JAN2002 . The load module is 002928 bytes long. The
program AMODE is ANY. The program RMODE is ANY.

The execution key for this program was USER_KEY.

Last Call or EXEC CICS Request

The last call or 'EXEC CICS' command was:
```

Last 3270 Facility

Sometimes, resolving abends is as easy as seeing the last entry made by the user. The Last 3270 facility displays the last screen accessed by the user at the time of the abend. This facility shows an image of the screen and the exact position of the cursor at the time of the abend. CICS Abend-AID/FX also provides an analysis of the 3270 data stream, showing the order of each field and its attributes, as well as highlighting any data stream errors.

Figure 3-9. Last 3270 Screen

ABC COMPANY ORDER ENTRY SYSTEMS			
CUSTOMER NUMBER: 750430_		CUSTOMER NAME: _____	
ITEM NUMBER	QUANTITY REQUIRED	DATE REQUIRED	METHOD OF SHIPMENT
4X1275	3	19MAR2002	A
5T6179	2	31MAR2002	A
7M851@	5	01APR2002	R
_____	_____	_____	_____

Comprehensive Environment Support

CICS Abend-AID/FX supports more languages, databases, and operating systems than any other product available. Specialized diagnostic support is provided for DB2, IMS DL/I, Hogan Systems Software, and MSA DCI environments. The CICS Abend-AID/FX analysis is generated based on the particular environment. As a result, programmers can better respond to abends, regardless of the technology involved.

CICS Abend-AID/FX for DB2 helps application programmers and DBAs resolve CICS transaction failures in the DB2 environment. CICS Abend-AID/FX for DB2 interrogates the DB2 catalog and analyzes all DSNB abends and non-zero SQL return codes, providing the programmer with the information needed to quickly resolve DB2 application failures:

- Exact SQL statement in error
- Diagnosis of the specific DB2 reason and SQL code
- Host variable names and contents
- Columns referenced
- Precompile information
- DB2 plan or package bind, precompile, and dependency data
- Resource control table (RCT) entries.

Figure 3-10. DB2 SQL Code 302 — Diagnostic Summary

```
CICS Abend-AID/FX ----- Diagnostic Summary ----- Row 000001 of 000066
COMMAND ==>                                SCROLL ==> CSR
```

```
An X302 abend occurred in program DSCX3022. The abending transaction was
SQL5 running at terminal S067 for user ID CICSUSER.
```

SQL Return Code

```
SQLCODE -302
```

```
The value of input variable is invalid or too large for the target column.
One or more packed decimal fields used for this SQL statement contained
invalid data. The invalid field(s) are as follows:
```

Host Variable	Contents	Error
:WS-FIELDS.WS-SSN	Char 11298	INVALID NUMERIC
	Zone FFFFFFF00000	
	Digit 1129800000	
	1...+...10	
	*	

SQL Statement

```
The SQL statement returning this SQLCODE at preprocessor sequence number
157 in program DSCV3022 is:
```

```
EXEC SQL INSERT
      INTO CWXAAD2 . EMP
      VALUES
      ( : WS-FIELDS.WS-SSN , NULL
      )
```

System Programmer Facilities

CICS Abend-AID/FX helps system programmers quickly analyze and resolve region faults. When a region problem occurs, CICS Abend-AID/FX performs an analysis of the dump and allows single-keystroke access to any area of the dump. This enables programmers to view a variety of formatted control block displays and analytical reports that reflect the status of the region, thus identifying the most likely causes of the problem.

Diagnostic Summary

The Diagnostic Summary provides the logical starting point for debugging CICS region dumps. It highlights the critical information needed to quickly determine the cause of the problem:

- Type of failure
- Diagnosis of the failure
- Location of the corrupted storage
- Tasks that could have caused the error
- Programs that may have had access to a corrupted area or had data matching the corrupting data
- Number of programs changed in the last 14 days.

Figure 3-11. Storage Violation — Diagnostic Summary

```

CICS Abend-AID/FX ----- Diagnostic Summary ----- Row 000001 of 000032
COMMAND ==>                                SCROLL ==> CSR

Date... 12FEB2002  Time... 09:54:41  ASID... 0000  Dump Code... SM0102
Title.. CICS DUMP: SYSTEM=H01AC118 CODE=SM0102  I  Category.... STG VIOL

To display the Diagnostic Summary in abbreviated format select ABBREV

                                Description

This dump ( code SM0102 ) was taken because CICS detected a storage
violation.

The CICS message associated is: DFHSM0102 H01AC118 A storage violation
(code X'0D11') has been detected in module DFHSMMF .

The short symptom string is: PIDS/566540301 LVLS/330 MS/DFHSM0102
RIDS/DFHSMMF PTFS/UN34195 PRCS/00000D11

                                Analysis

A storage violation occurred. CICS detected that the storage at address
0013C690 has an invalid storage zone. The leading storage zone is
E7D4C2F0F0F0F2F7 and the trailing storage zone is FFD4C2F0F0F0F2F7.

Addressability and matching information are available for the area.

The current task at the time the dump was taken was 27.

The CICS trace table has 2 exception entries, and 2 are related to task 27.
The last exception trace entry for task 27 gives the following information:

      00027 1 ME FF45 MEWS *EXC* SYMREC-ERROR

The CICS Kernel Error Table has no entries.

There are no CICS enqueues held.

There were 7 programs changed in the last 14 days.

```


Figure 3-13. Task/Wait Analysis Screen, Scrolled Right

CICS Abend-AID/FX ----- Task/Wait Analysis -----					Row 000001 of 000011			
COMMAND ==>					SCROLL ==> CSR			
					<== ==>			
S Task Detail		L Program Levels		C Storage Chain		E EIB Detail		
T Trace Table		M Monitoring Detail		W Wait Analysis				
DTA	Storage	Program	Offset	Enq Held	NQEA	Resource Type	Resource Name	Time of Suspend
*****	*****	*****	*****	***	*****	*****	*****	*****
- DTA0029	20K	DFHEMTD	+014BC0	NO				00:00:00.
- DTA002A	2K	RFDREAD1	+000064	NO		ICWAIT	B173	15:30:28.
- DTA0007	3K	DFHZNAC		NO				15:30:54.
- DTA0016	1K	DFHFCQT		NO		FCCFQR		14:48:58.
- DTA0030	1K	DFHFCQT		NO		FCCFQS		15:29:01.
- DTA0010	1K	DFHZCSTP		NO		TCP_NORM	DFHZDSP	15:31:34.
- DTA0019	OK	DFHAPATT		NO		ICEXPIRY	DFHAPTIX	14:55:33.
- DTA0009	OK	DFHAPATT		NO		ICMIDNTE	DFHAPTIM	14:48:37.
- DTA0008	OK			NO		TIEXPIRY	DS_NUDGE	14:55:33.
- DTA0021	OK			NO		SMSYSTEM		15:27:42.
- DTA0006	OK			NO		ENF	NOTIFY	14:47:26.
***** BOTTOM OF DATA *****								

Type a line command and press Enter to process it

Figure 3-14. Task/Wait Analysis Screen, Scrolled Far Right

CICS Abend-AID/FX ----- Task/Wait Analysis -----				Row 000001 of 000011			
COMMAND ==>				SCROLL ==> CSR			
				<==			
S Task Detail		L Program Levels		C Storage Chain		E EIB Detail	
T Trace Table		M Monitoring Detail		W Wait Analysis			
DTA	NQEA	Resource Type	Resource Name	Time of Suspend	Userid	UOWID	
*****	*****	*****	*****	*****	*****	*****	
- DTA0029				00:00:00.000	CFXRFD0	ACFBD6C68FB68001	
- DTA002A		ICWAIT	B173	15:30:28.922	CFXRFD0	ACFBDFAAFA278601	
- DTA0007				15:30:54.148		ACFBD6C341C34400	
- DTA0016		FCCFQR		14:48:58.900		ACFBD66465063601	
- DTA0030		FCCFQS		15:29:01.038		ACFBD66464DD5C01	
- DTA0010		TCP_NORM	DFHZDSP	15:31:34.276		ACFBD650C5227601	
- DTA0019		ICEXPIRY	DFHAPTIX	14:55:33.804		ACFBD64FE732DA01	
- DTA0009		ICMIDNTE	DFHAPTIM	14:48:37.739		ACFBD64FE6FCA201	
- DTA0008		TIEXPIRY	DS_NUDGE	14:55:33.722			
- DTA0021		SMSYSTEM		15:27:42.409			
- DTA0006		ENF	NOTIFY	14:47:26.603			
***** BOTTOM OF DATA *****							

Domain Analysis

CICS Abend-AID/FX provides a list of all domains, tailored to the specific CICS Transaction Server for z/OS or OS/390 or to the CICS/ESA release being utilized. When a domain is selected from this list, summary information is provided that includes the status of the domain and detailed information about the control blocks within the domain. The system programmer can view control blocks in an interpreted, DSECT, or hexadecimal format. With this information, system programmers can view the physical structure of CICS, enabling them to quickly understand differences between supported releases.

Figure 3-15. Domain Analysis for the Dispatcher Domain

```
CICS Abend-AID/FX --- Dispatcher Domain Task Summary --- Row 000001 of 000042
COMMAND ==> SCROLL ==> PAGE ==>
```

M Monitoring Detail			T Trace Table	W Wait Analysis			
DTA	KE Task	TCA	Tran Task	Terminal	Status Task	Type	Resource Name
*****							****
DTA0050	Wait Analysis						QUEUE
DTA004F	Wait Type.....						QUEUE
DTA004E	Wait Name..... DMWTQUEU						QUEUE
DTA004C	SUSPAREA..... 240509E0						QUEUE
DTA004A							QUEUE
DTA0049	System task wait on the Domain Manager wait queue.						QUEUE
DTA0047							QUEUE
DTA0046							QUEUE
DTA0045							QUEUE
DTA0044	Help=PF01 End=PF03						QUEUE
DTA0043							QUEUE
DTA0041	KETA0041				SUS	YES	DMWTQUEU
DTA0040	KETA0040				SUS	YES	STP_DONE
DTA003F	KETA003F				SUS	YES	DMWTQUEU
DTA003E	KETA003E				SUS	YES	DMWTQUEU

Type a line command and press Enter to process it

Program Change Summary

The cause of a region failure is often due to a recently changed program, or a program that is accessed from an incorrect library. The Program Change Summary identifies all recently changed programs and provides the latest link-edit and zap dates, as well as the library from which each program was loaded.

Figure 3-16. Program Change Summary

CICS Abend-AID/FX				-----	Program Change Summary	-----	Row 000001 of 000204
COMMAND ==>							Scroll ==> CSR
Date of Last Zap	Date of Last Link	Module	Load Library				
*****	*****	*****	*****				
29SEP2001	29SEP2001	PCBSBA01	PNDVB.TEST.LOADC				
29SEP2001	29SEP2001	PCBSBA02	PNDVB.TEST.LOADC				
	25SEP2001	CWDEMCBL	SYS2.CICS.XPED.R66.LOAD				
07SEP2001	07SEP2001	QA0AIP30	BICM.CICOT.TEST.LOAD				
	03SEP2001	BB3BVCC2	BICM.CICOT.TEST.LOAD				
	03SEP2001	DFHZNEP	SYS2.CICS2.LOAD				
02SEP2001	02SEP2001	BB82F0	BICM.CICOS.PROD.LOAD				
	21SEP2001	DBGUPLT	SYS2.CICSTEST				
21AUG2001	21AUG2001	FXPS5200	BICM.CICOS.QA.LOAD				
20AUG2001	20AUG2001	XBOBMM52	BICM.CICOS.PROD.LOAD				
20AUG2001	20AUG2001	XBOBMP50	BICM.CICOS.PROD.LOAD				
19AUG2001	19AUG2001	CBSBA01	PNDVB.TEST.LOADC				
19AUG2001	19AUG2001	CBSBA02	PNDVB.TEST.LOADC				
	19AUG2001	CUSTXC	SYS2.CICS.XPED.R66.LOAD				
	19AUG2001	DBGUGBL	SYS2.CICS.XPED.R66.LOAD				
	14AUG2001	CWCMCC10	SYS2.CICS.CSS.R30.LOAD				

Intelligent Commands

CICS Abend-AID/FX provides system programmers with intelligent commands that enable easy identification of storage ownership at the time of the region fault. The WHO, MATCH, and WHERE commands identify ownership of any piece of storage, the tasks having addressability to the storage, and the location and ownership of data that matches data having overlaid storage.

Figure 3-17. WHO Command

```

CICS Abend-AID/FX ---- Addressability Detail - KETASK --- Row 000001 of 000004
COMMAND ==>                                SCROLL ==> CSR

Area: 002744F0
002744F0 +00000000 00D4C2F0 F0F0F5F2 00000000 00000000 * MB00052      *
00274500 +00000010 00000000 E9E3C3C1 000058CD 006405CC *  ZTCA  .. ...*
00274510 +00000020 04050801 00274F10 FE2752B0 00000000 *.... .|.....*
00274520 +00000030 00000000 00274520 0027405C 00274C78 *   ... . * .<.*

Who      TRAN Save Area Address  Description  Program  Register Contents  Disp
*****  ****  *
KETA0007 ECCI KETS003  00010C20 DOMAIN      DFHAPDS  R01      002737A8
          ECCI KETS003  00010C20 DOMAIN      DFHAPDS  R02      002737BC
          KETS004  03D936A0 LIFO        DFHETC   R01      002737A8
          KETS004  03D936A0 DOMAIN      DFHETC   R02      002737BC

```

Chapter 4.

The Compuware Advantage

For more than 20 years, Compuware has provided companies with systems software and services to help ensure that mission-critical applications are successfully implemented on time and supported 24 hours a day. Ranked among the top 20 independent software vendors worldwide, Compuware is the leader in mainframe run-time tools for application testing, debugging, and maintenance.

Compuware is the overwhelming choice of programmers throughout IS departments worldwide. Why? Because programmers know that Compuware products can provide an immediate increase in programming productivity. With approximately 70 percent of the IS staff's time spent on tasks related to testing and maintaining systems and applications, Compuware products represent the most cost-effective means to improve the productivity of programmers, analysts, and database administrators. Our products are designed to work across your enterprise, helping programmers to develop reliable systems the first time and maintain them over years of use.

An Integrated Solution

Compuware is the only software manufacturer offering a complete, integrated solution to meet the software testing and maintenance needs of IS programming staffs. The integrated products that form the Compuware Productivity Tool Set give IS staff an enhanced ability to perform:

- **File and Data Management**, to create effective test data and maintain production file integrity.
- **Interactive Analysis and Debugging**, to isolate and correct imperfections in program design and logic.
- **Automated Testing**, to enable testing of mission-critical systems and applications prior to production processing.
- **Fault Management**, to detect, analyze, and resolve application and region faults.
- **Database Management**, to rapidly analyze and maintain relational database environments to improve system reliability.
- **Client/Server Application Development**, to productively develop complex client/server applications and deploy them in a heterogeneous environment.
- **Client/Server Systems Management**, to configure, monitor, manage, and automate client/server relational database systems across the enterprise from a central management console.

The Compuware Commitment

Our efforts focus on one goal — to provide your company with long-term success in testing, debugging, and maintaining applications.

- **Customer Service and Support:** Our Service Hotline enables us to respond to your emergency needs 24 hours a day, 365 days a year.

- **Sales Support:** Made up of people who have lived the programmer's life, our Sales Support team provides technical assistance during initial product implementation.
- **Training:** A variety of training programs are available to bring maximum return on your Compuware product investment.
- **Seminars:** Compuware provides a wide variety of educational seminars throughout the world, focusing on industry and product-specific issues.